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DECLARATION

The undersigned, Jan McLin Clayberg, having an office at 5316 Little Falls Road, Arlington, VA 22207-1522, hereby states that she is well acquainted with both the English and German languages and that the attached is a true translation to the best of her knowledge and ability of the specification and claims of international patent application PCT/EP2004/008360 of WORGULL, K. ET AL., entitled "HAND HAIR DRYER WITH TWO HANDLE GRIPS".

The undersigned further declares that the above statement is true; and further, that this statement was made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or document or any patent resulting therefrom.


Jan McLin Clayberg

HAND HAIR DRYER WITH TWO HANDLE GRIPS

The invention relates to a hand hair dryer as generically defined by the preamble to claim 1.

One such hand hair dryer is known for instance from European Patent
5 Disclosure EP 1086631 A1, which is provided with an electric fan and an electric heater, located in line with it, for generating an air stream from a barrel portion. The fan is located in a housing portion, and the heater is located inside the barrel portion. A handle grip that has operator control elements (switches) is located on the housing portion, at an angle of approximately 90° to the barrel portion. When
10 the stylist is holding the dryer with one hand on the handle grip, he can use the operator control elements to set a certain type of drying with a defined temperature level and fan level; typically, these levels are rarely changed during a treatment period. To improve the stability (conditioning) of a section of hair, formed with a brush, cold air from the fan is briefly blown at this section; for that purpose the
15 heater is briefly switched off via a cold air switch. In certain positions for holding the hand hair dryer, the hand hair dryer cannot be handled ergonomically.

The object of the invention is to create a hand hair dryer of this same generic type which achieves an ergonomic improvement by simple provisions.

This object is attained by the characteristic of the definitive body of claim 1.

Advantageous refinements of the
invention are defined by the dependent claims.

The invention will be described in further detail in terms of an exemplary
5 embodiment.

Shown are:

Fig. 1, in a side view, a hand hair dryer with a first and a second handle grip;

Fig. 2, a typical manipulating position using the first handle grip of a hand hair
dryer, when a stylist is treating the hair on one side of the head with an air stream;

10 Fig. 3, a typical manipulating position with the first handle grip of a hand hair
dryer when a stylist is treating the hair on top of the head with an air stream;

Fig. 4, unlike Fig. 3, an ergonomic advantage in manipulating the hand hair
dryer using a second handle grip of the hand hair dryer;

Fig. 5, an ergonomic difference where a person is drying her own hair with a
15 hand hair dryer which has a first and a second handle grip;

Fig. 6, in a side view, a hand hair dryer as in Fig. 1, but with a first cold air combination switch;

Fig. 7, in a side view, a hand hair dryer as in Fig. 1, but with a second cold air combination switch;

5 Fig. 8, in a side view, a hand hair dryer as in Fig. 1, but with a third cold air combination switch; and

Fig. 9, in a side view, a hand hair dryer as in Fig. 6, but with a second handle grip that remains cold.

Fig. 1 shows a hand hair dryer 1 with an electric fan 2 and with an electric
10 heater 3, located in line with it, for generating an air stream 4 from a barrel portion 5; the fan 2 is located in a housing portion 6, and the heater 3 is located inside the barrel portion 5. A first handle grip 8, which has operator control elements 7 (fan speed switch 26, heat level switch 27) is located on the housing portion 6, at an angle of approximately 90° to the barrel portion 5. The barrel portion 5 is embodied
15 as a second handle grip, which has approximately the same diameter (dimensioning) as the first handle grip 8. As a result, when the hand hair dryer 1 is being used, it can selectively be held by the second handle grip 9 instead, which makes for an ergonomic improvement in manipulating the hand hair dryer 1, as can be seen for instance from Figs. 2 through 5.

The second handle grip 9 is embodied as heat-insulated (see also Fig. 9), and as a result cannot become hot (cold handle grip zone).

Alternatively or in addition, the barrel portion 5 can be embodied as heat-insulated from outside, and as a result the second handle grip 9 cannot get hot.

5 The second handle grip 9 is shaped cylindrically, resulting in simple grasping and holding.

Selectively, the first and second handle grips 8, 9 are each provided with a nonslip surface 13. This makes for a secure grip when holding the hand hair dryer 1.

10 A first cold air switch 10 is located on the first handle grip 8, and a second cold air switch 11 is located on the second handle grip 9. The second cold air switch 11 is located in the vicinity 12 of, or inside, the housing portion 6. As a result, even when holding the second handle grip 9, ergonomic operation of the second cold air switch 11 is obtained. The cold air switches 10, 11 are preferably provided in the
15 form of pushbuttons 10, 11. By actuation of a given cold air switch 10, 11, a power supply to the heater 3 is interrupted, so that only the cold air 31 (Fig. 9) from the fan 2 emerges from the air stream outlet 35.

Fig. 2 shows a typical manipulating position using the first handle grip 8 of a hand hair dryer 1 when a stylist 20 is treating hair 14 in a rear hair region 14.1 with an air stream.

5 Fig. 3 shows a typical manipulating position at the first handle grip 8 of a hand hair dryer 1 when hair 14.2 on top of the head is being treated with an air stream by a stylist 20. The unfavorable posture of the arm of the stylist 20 is clearly apparent. A power cord 25 moreover extends unfavorably close to the person 15 here.

10 Fig. 4, in a distinction to Fig. 3, shows an ergonomic advantage in manipulating the hand hair dryer 1 by using a second handle grip 9 of the hand hair dryer 1. Here the low arm position of the stylist 20, which is more ergonomically favorable, can be clearly seen. Moreover, the power cord 25 extends more favorably away from the person 15.

15 Fig. 5 shows an ergonomic distinction in when a person is drying her own hair with a hand hair dryer 1 that has a first and a second handle grip 8, 9. Two essential distinctions are clearly visible, for the same positioning of the hand hair dryer 1 relative to the hair 14.

1. When the hand hair dryer 1 is held by the first handle grip 8, the right arm 21 must be held markedly higher than the left arm 22 when the hand hair dryer 1 is held by the second handle grip 9.

2. Because there is a greater distance X1 between a wrist point 23 and a center of gravity 24 of the hand hair dryer 1, it is harder to hold the hand hair dryer 1. It is also difficult to keep an intended distance between an air outlet 25 and the hair 14. By means of a smaller distance X2 between a wrist point 23 and a center of gravity 24 of the hand hair dryer 1, holding the hand hair dryer 1 is ergonomically more advantageous, and it is easier to keep an intended distance between the air outlet 25 and the hair 14.

Fig. 6, in a side view, shows a hand hair dryer 1 of Fig. 1, but with a first cold air combination switch 16, which is located between the first and second handle grips 8, 9. As the first cold air combination switch 16, a pushbutton 17 is provided here, which can be actuated with one finger (F1) selectively from the first or second handle grip 8, 9. As a result, a second cold air switch 11 is dispensed with.

Fig. 7, in a side view, shows a hand hair dryer 1 of Fig. 1, but with a second cold air combination switch 16.1, which is located between the first and second handle grips 8, 9. Here, a one-legged toggle switch 18 is provided as the second cold air combination switch 16.1; it can be actuated selectively from the first or second handle grip 8, 9, using one finger (F2, F3). As a result, a second cold air switch 11 is dispensed with.

Fig. 8, in a side view, shows a hand hair dryer 1 of Fig. 1, but with a second cold air combination switch 16.1, located between the first and second handle grips 8, 9. Here, a two-armed (V-shaped) toggle switch 19, is provided as the third cold air combination switch 16.2; it can be actuated selectively from the first or second handle grip 8, 9, using one finger (F2, F3). As a result, a second cold air switch 11 is dispensed with.

In Fig. 9, compared to the hand hair dryer 1 of Fig. 6, an especially advantageous hand hair dryer 1 is shown, in which the second handle grip 9 remains especially cool because a centrally located warm-air conduit 28 and a coaxial cold-air conduit 29 are provided in the barrel portion 5. The central warm-air conduit 28 is formed by a hollow- cylindrical barrel 30, in which the heater 3 is located. The coaxial cold-air conduit 29 is formed by the barrel portion 5 and the central warm-air conduit 28. The central warm-air conduit 28 and the coaxial cold-air conduit 29 are subjected to a cold air stream 31 of the fan 2, and by means of the heater 3, a warm air stream outlet 32 from the central warm- air conduit 28 and a cold air stream 33 from the coaxial cold-air conduit 29 are effected, and the constant cold air stream 31 in the coaxial cold-air conduit 29 makes for a cool second handle grip 9.

List of Reference Numerals:

	1	Hand hair dryer
	2	Fan
	3	Heater
5	4	Air stream
	5	Barrel portion
	6	Housing portion
	7	Operator control elements
	8	First handle grip
10	9	Second handle grip
	10	First cold air switch
	11	Second cold air switch
	12	Vicinity of housing portion 6
	13	Nonslip surface
15	14	Hair
	14.1	Rear hair region
	14.2	Hair on top of the head
	15	Person
	16	First cold air combination switch
20	16.1	Second cold air combination switch
	16.2	Third cold air combination switch
	17	Pushbutton

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|----|----|--------------------------|
| | 18 | One-legged toggle switch |
| | 19 | Two-legged toggle switch |
| | 20 | Hair stylist |
| | 21 | Right arm |
| 5 | 22 | Left arm |
| | 23 | Right wrist point |
| | 24 | Left wrist point |
| | 25 | Power cord |
| | 26 | Fan speed switch |
| 10 | 27 | Heat level switch |
| | 28 | Central warm-air conduit |
| | 29 | Coaxial cold-air conduit |
| | 30 | Barrel |
| | 31 | Cold air stream/fan 2 |
| 15 | 32 | Warm air stream outlet |
| | 33 | Cold air stream outlet |
| | 34 | Air intake region |
| | 35 | Air stream outlet |

F1-3 Switch actuation direction

20 X1, X2 Distance between wrist point and center of gravity of hand hair dryer